CIVIL TECH LABS

Accredited by NABL as per ISO/ IEC 17025 : 2005

5, 1st Cross, Srinivasa Colony, Mission Road, Bangalore - 560027

Ph: 080 - 4114 2867 / Mob. : 96862 31801, Email: civiltechlabs@gmail.com

T-2654

To,

Assistant Executive Engineer,
Vidyaranyapura Sub Division,
BBMP.

10th July 2015

Dear Sir,

Sub: Testing of Semi Dense Bituminous Concrete.

As requested, tests on physical properties were carried out for the Semi Dense Bituminous Concrete supplied by you, for the work of **'Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

Khushboo

CIVIL TECH LABS BANGALORE

(KHUSHBOO L.)
Quality Manager

AE-11

CIVIL TECH LABS

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Ph: 080 - 4114 2867, Email: civiltechlabs@gmail.com

TEST REPORT

STRIPPING TEST OF ROAD AGGREGATES

Semi Dense Bitumenous Concrete

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of Agency	Sri. N. Thirunagendra.
Date of Testing	10/07/2015

Method of Test	Observation No.	Uncovered Area/Stripping in %	Average Stripping Value in %	As Per Morth Table 500-14	Remarks
IS 6241-1971 (Reafirmed 2003)	1	3.9	3.8	**5 % Maximum**	Satisfactory
	2	3.6			
	3	3.8			

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Lab Incharge
Civil Tech Labs

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CIVIL TECH LABS
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TEST REPORT

WATER ABSORPTION TEST OF ROAD AGGREGATES

Semi Dense Bitumenous Concrete (SDBC)

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of Agency	Sri. N. Thirunagendra.
Date of Testing	10/07/2015

Method of Test	Sample No.	Water Absorption in %	Average Water Absorption in %	As per MORTH Table 500-14	Remarks
IS : 2386 (Part 3)	1	0.75	0.77	**2 % Maximum**	Satisfactory
	2	0.76			
	3	0.79			

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Civil Tech Labs

CIVIL TECH LABS BANGALORE

CIVIL TECH LABS
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TEST REPORT

TEST ON AGGREGATES ('AIV' & Combined Flakiness & Elongation Index)

Semi Dense Bitumenous Concrete

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of Agency	Sri. N. Thirunagendra.
Date of Testing	10/07/2015
Reference	**MORTH Table 500-14**

Sl. No	Aggregate Impact Value 'AIV' in %	Average AIV in %	Remarks
1	21.6	22.6	Satisfactory (As per MORTH for SDBC, Maximum allowed AIV is 27 %)
2	23.5		

Test	Result in %	Combined Flakiness & Elongation Index 'C-F&E' in %	Remarks
Flakiness Index	12.5	26.1	Satisfactory (As per MORTH for SDBC, Maximum allowed 'C-F&E' is 30 %)
Elongation Index	13.6		

Note:

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TEST REPORT

TEST ON THE DETERMINATION OF BITUMEN CONTENT ON SEMI DENSE BITUMINOUS CONCRETE MIX-GRADE 2

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of the Agency	Sri. N. Thirunagendra.
Date of Testing	10/07/2015

A)

Sl. No.	Test	Test Method	Technical Reference
1	Extraction of mineral aggregate	**Test Method A (Centrifuge Method)**	**ASTM: D2172/ D2172M-11**
2	Determination of amount of mineral matter/fines in the extract	**Ashing Method**	

B)

Specification: As Per MORTH (4th Revision) Table 500-15, Bitumen Content for SDBC Grade-2 is MIN 5%		
Sl. No.	**Description**	**Values**
1	Weight of bituminous mixture before extraction test, **W_1 g**	**2000**
2	Weight of mineral aggregate obtained from centrifuge extractor, **W_2 g**	**1882.3**
3	Weight of mineral matter in the total volume of extract (by ashing), **W_3 g**	**12.6**
4	Total weight of aggregate in the bituminous mixture, **W_4 g = (W_2 +W_3) g**	**1894.9**
5	Total weight of Bitumen extracted from the mixture, **W_5 g = (W_1-W_4) g**	**105.1**
6	Bitumen content in %, **(W_5/W_1) %**	**5.26**

Remarks	**Satisfies the requirements.**

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TEST REPORT

GRADATION TEST ON SEMI DENSE BITUMINOUS CONCRETE MIX GRADE - 2

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of the Agency	Sri. N. Thirunagendra.
Date of Testing	10/07/2015
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011)

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-15 for SDBC Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
13.2	100	**100**	**Satisfies the requirements**
9.5	90-100	**98.3**	
4.75	35-51	**42.6**	
2.36	24-39	**27.8**	
1.18	15-30	**22.2**	
0.3	9-19	**16.5**	
0.075	3-8	**7.1**	

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TEST REPORT

GRADATION TEST ON SEMI DENSE BITUMINOUS CONCRETE MIX GRADE - 2

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of the Agency	Sri. N. Thirunagendra.
Date of Testing	10/07/2015
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011)

	Sample-2		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-15 for SDBC Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
13.2	100	**100**	**Satisfies the requirements**
9.5	90-100	**97.8**	
4.75	35-51	**43.6**	
2.36	24-39	**26.8**	
1.18	15-30	**21.8**	
0.3	9-19	**17.9**	
0.075	3-8	**6.8**	

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T-2654

To,

Assistant Executive Engineer,
Vidyaranyapura Sub Division,
BBMP.

10th May 2015

Dear Sir,

Sub: Testing of Wet Mix Macadam.

As requested, tests on physical properties were carried out for the Wet Mix Macadam supplied by you, for the work of **'Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

Khushboo

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(KHUSHBOO L.)
Quality Manager

AE-11

CIVIL TECH LABS
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TEST REPORT

GRADATION TEST ON WET MIX MACADAM

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of the Agency	Sri. N. Thirunagendra.
Date of Testing	10/05/2015
Technical Reference	MORTH Table 400-11

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfy the Requirements**
45	95-100	**98.4**	
22.4	60-80	**74.2**	
11.2	40-60	**45.6**	
4.75	25-40	**33.8**	
2.36	15-30	**25.6**	
0.6	8-22	**17.8**	
0.075	0-8	**6.6**	

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Civil Tech Labs

CIVIL TECH LABS BANGALORE

CIVIL TECH LABS

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TEST REPORT

GRADATION TEST ON WET MIX MACADAM

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of the Agency	Sri. N. Thirunagendra.
Date of Testing	10/05/2015
Technical Reference	MORTH Table 400-11

	Sample-3		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfy the Requirements**
45	95-100	**98.4**	
22.4	60-80	**72.4**	
11.2	40-60	**45.6**	
4.75	25-40	**34.8**	
2.36	15-30	**23.6**	
0.6	8-22	**17.4**	
0.075	0-8	**7.2**	

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Civil Tech Labs

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TEST REPORT

GRADATION TEST ON WET MIX MACADAM

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of the Agency	Sri. N. Thirunagendra.
Date of Testing	10/05/2015
Technical Reference	MORTH Table 400-11

	Sample-4		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfy the Requirements**
45	95-100	**98.8**	
22.4	60-80	**73.4**	
11.2	40-60	**46.5**	
4.75	25-40	**35.8**	
2.36	15-30	**24.6**	
0.6	8-22	**18.4**	
0.075	0-8	**6.6**	

Note:

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TEST REPORT

GRADATION TEST ON WET MIX MACADAM

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Name of the Agency	Sri. N. Thirunagendra.
Date of Testing	10/05/2015
Technical Reference	MORTH Table 400-11

	Sample-5		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfy the Requirements**
45	95-100	**98.2**	
22.4	60-80	**72.4**	
11.2	40-60	**45.6**	
4.75	25-40	**34.8**	
2.36	15-30	**25.6**	
0.6	8-22	**17.4**	
0.075	0-8	**7.3**	

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TEST REPORT

TEST ON AGGREGATES ('AIV' & Combined Flakiness & Elongation Index)

Wet Mix Macadam

Name & Address of the Customer	AEE, Vidyaranyapura Sub Division, BBMP.
Name of Work	Improvements to roads at Balaji layout (near Singapura main road and cross roads in ward no. 11 (Kuvempunagara) Vidyaranyapura Sub Division.
Agency of the Name	Sri. N. Thirunagendra.
Date of Testing	10/05/2015
Reference	**MORTH Table 400-10**

Sample No	Aggregate Impact Value 'AIV' in %	Average AIV in %	Remarks
1	21.3	21.9	Satisfactory (As per MORTH for WMM, Maximum allowed AIV is 30 %)
2	22.5		

Test	Result in %	Combined Flakiness & Elongation Index 'C-F&E' in %	Remarks
Flakiness Index	12.4	25.7	Satisfactory (As per MORTH for WMM, Maximum allowed 'C-F&E' is 30 %)
Elongation Index	13.3		

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